

Cooperative Purchasing Micro-Evolutions: A Longitudinal International Study

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Summary

This paper deals with the evolution of relatively young purchasing groups. Although previous research focussed on macro-evolutionary phases of purchasing groups, no attention has yet been paid to the intra-phase developments, the so-called ‘micro-evolutions’. Insight into micro-evolutions is crucial to better understand how purchasing groups (can) develop over time. We conducted three in-depth case studies in different countries and identified five dimensions of micro-evolutions: member relationships, objectives, activities, organisation, and resources. For each dimension, we provide an overview of micro-evolutions to guide purchasing groups in developing the dimension. We conclude that the dimension ‘activities’ is very important and that purchasing groups do not have to develop the dimensions simultaneously.

Educator and practitioner summary

This paper gives insight into micro-evolutions within macro-evolutionary phases of purchasing groups. Potential problems and decision-making points are elicited, which can determine the future development of relatively young purchasing groups. In addition, five micro-evolution dimensions are identified. For each dimension, an overview is provided of micro-evolutions to guide purchasing groups in developing the dimension.

Keywords: Cooperative Purchasing; Evolution; International.

Introduction

The theory of evolution explains how organisms change over time in terms of micro- and macro-evolution. Micro-evolution deals with the occurrence of small-scale changes at or below the species level. Macro-evolution concerns the occurrence of large-scale changes above the species level that could result in the emergence of new life forms (Brooks and McLennan, 1991).

There is an ongoing debate about the advantages and disadvantages of applying an evolutionary approach to social science. For further discussions of this debate, we refer to Hodgson (2002). In this paper, we acknowledge that biological evolution and organisational evolution have differences, but that an analogy exists with the evolution of open complex systems, such as organisations (Boulding, 1956; Schumpeter, 1962; Nelson and Winter, 1982). Micro-evolutions account for small-scale changes in an organisation. This type of change resembles first loop

learning (Argyris and Schön, 1978), which is the adjustment of otherwise routine behaviour (Nelson and Winter, 1982). Macro-evolution deals with the occurrence of large-scale changes in an organisation that could result in the emergence of a new organisational form. These changes resemble second loop learning (Argyris and Schön, 1978), a choice of a new behaviour or organisational form. These changes can occur when outsiders with new ideas enter an organisation or when routine behaviour results in such negative feedback that it causes one to experience a 'critical incident' that drives a cultural change (Schein, 1985).

In the field of cooperative purchasing, some research has been conducted on macro-evolution phases in purchasing groups (D'Aunno and Zuckerman, 1987; Johnson, 1999; Nollet and Beaulieu, 2003). However, within the macro-phases at a micro-evolutionary level, little is known about when and under which circumstances which problems can be expected and prevented in purchasing groups. Such problems could cause groups to struggle and under-perform, to not survive a phase or to dismantle. Insight into micro-evolutions could benefit groups in their performance and could guide them in their development, if necessary. However, as noted, there is little evidence on how purchasing groups evolve over time on a micro-evolutionary level, which leads to a lack of understanding of purchasing group development. This is lamentable, as dynamics are important in collaboration processes (e.g. Ring and Ven, 1994). To bridge the research gap between macro- and micro-evolutions in the context of cooperative purchasing, we explore cooperative purchasing micro-evolutions. We build on previous research into macro-evolutions, which we use as a framework for exploring micro-evolutions. Our research question is: What are the main micro-evolutions that take place in the macro-phases in purchasing groups? Thus, we study purchasing group development at a more detailed level than previous studies.

We define a purchasing group as an organisation in which cooperative purchasing processes take place. We define cooperative purchasing as the operational, tactical, and/or strategic cooperation between two or more independent organisations in one or more steps of the purchasing process by pooling and/or sharing their purchasing volumes, information, and/or resources in order to create symbiosis. In the next sections, we discuss cooperative purchasing macro- and micro-evolutions in more detail.

Cooperative purchasing macro-evolutions

Three macro-models have been developed in the context of cooperative purchasing. These macro-models are based on literature (D'Aunno and Zuckerman, 1987), four case studies (Johnson, 1999), and seventy-three interviews (Nollet and Beaulieu, 2003). The models were developed independently from one another, but overlap substantially. For instance, all models recognise four similar macro-phases. In addition to the macro-phases, Nollet and Beaulieu (2003) recognise several dimensions based on a literature study and their own research. We integrated the models into one typology (see Table 1). The labels of the macro-phases in the table are based on the results of D'Aunno and Zuckerman (1987). The labels of the dimensions are based on the results of Nollet and Beaulieu (2003).

D'Aunno and Zuckerman (1987) note that purchasing group development models are similar to life-cycle models of individual organisations (e.g. Quinn and Cameron, 1983). The core theoretical assertion of purchasing group development models is that purchasing groups pass through predictable phases. Strategies, structures, and activities of a group correspond to the phases (D'Aunno and Zuckerman, 1987). Nollet and Beaulieu (2003) note that a purchasing group does not have to start in the first macro-phase, nor that the final macro-phase should be aimed at as a key objective. In addition, more developed forms do not always have to be the best

forms, as different organisational forms are appropriate in different circumstances (Woodward, 1958, 1965; Burns and Stalker, 1961; Lawrence and Lorsch, 1967).

Table 1: A macro-evolutionary typology in the context of cooperative purchasing (based on D'Aunno and Zuckerman, 1987; Johnson, 1999; Nollet and Beaulieu, 2003)

Dimensions	Macro-phases			
	1. Informal coalition emergence	2. Formal cooperative transition	3. Cooperative maturity	4. Cross-road
Size	Usually few members	Usually more members	May have a lot of members	On the one hand, central decision making may increase, what enables the group to further expand; on the other hand, members may withdraw as the group reduces the autonomy of the members
Member relationships	Low-involvement relationships between members; members share similar ideologies and dependencies	Relationships between members become closer	Group becomes more capable in addressing all member concerns equitably; sustain member commitment	
Objectives	Lobby and start finding fields to cooperate; price reduction and increased product quality; environmental changes may initiate the group	Price reduction and increased product quality; start professionalising purchasing processes	Total cost reduction; emphasis on efficiency and maintenance	
Activities	Purchase simple generic commodities cooperatively; share purchasing information	Purchase also more complex commodities; increase in number of commodities managed	Offer also more diversified commodities and services to the members	
Organisation	Decentral; little planning and coordination; more or less hierarchy coordination; communication and structure is informal	From decentral to central; between hierarchy and market coordination; there are membership criteria; from informal to formal	Central; more or less market coordination; may be a private enterprise; stable structure; multidisciplinary; contracts may include mandatory participation clauses; formalisation of rules	
Group resources	Members manage all aspects; members are volunteers	Group develops separate resources	E-catalogues and e-links with members; group develops very competent resources	
Supplier relationships	Bid competition; operational and tactical buying		Develop also strategic supplier partnerships and innovation	

Note that the macro-phases correspond to the birth, growth, maturity, and decline or redevelopment phases discussed by Gray and Ariss (1985). The macro-phases also correspond to the entrepreneurial, collectivity, formalisation and control, and elaboration of structure phases discussed by Quinn and Cameron (1983).

Table 1 is a useful typology on a macro-level, but it does not specify how purchasing groups develop at a micro-evolutionary level. For instance, a purchasing group in the first phase may encounter several problems due to limited resources and a group in the third phase may encounter several problems due to the growing number of members. Another disadvantage of a macro-evolutionary model is that it is rather difficult and subjective to make claims concerning the point in time a group passes from one macro-phase into another phase. We show in this paper that a flexible micro-evolutionary model could alleviate these disadvantages of macro-models.

Cooperative purchasing micro-evolutions

In this section, we position the dimensions of Table 1 in general supply chain management literature. Purchasing groups can be interpreted as networks of (more or less) independent organisations. Adding the supplier perspective, purchasing groups are part of ‘network sourcing’ (Hines, 1996). As a result, the general framework for cooperative purchasing micro-evolutions

must be closely connected with a network management approach, such as discussed by Mentzer et al. (2001). Managing and adapting networks is mainly discussed in the context of supply chain management (Cooper et al., 1997). Bringing together logistics and purchasing in the network context (Tan, 2001) seems the ideal approach for researching purchasing groups as it includes knowledge about interorganisational relationships, integration and management of cooperative processes, and the purchasing function.

In general supply chain management literature, a much-used general management model has been developed by Lambert and Cooper (2000). This model distinguishes supply chain network structures, processes, and management components. In Table 2, we have integrated the dimensions from Table 1 with the model of Lambert and Cooper.

Table 2: A micro-evolutionary framework in the context of cooperative purchasing (adapted from Table 1 and Lambert and Cooper (2000))

Dimensions	Description
Structure	Who are the members with whom to link processes?
1. Size	Establishing the size of the group
2. Member relationships	Establishing relationships between members
Processes	What processes should be linked with each of the members?
1. Objectives	Establishing the objectives of the group
2. Activities	Establishing what to do together
Management components	What integration and management level should be applied for each process link?
1. Organisation	Establishing an organisational structure for the group
2. Group resources	Establishing resources for the group
3. Supplier relationships	Establishing relationships with suppliers

To identify micro-evolutions, we draw on organisational learning theory. As mentioned in the introduction, micro-evolutions resemble occasions of first loop-learning (Argyris and Schön, 1978). In organisational learning theory, micro-evolutions are also referred to as examples of organisations' – like purchasing groups – 'learning by doing' (e.g. Senge, 1990). The theory also explains that learning new reactions may occur by positive or negative feedback, such as problems, drivers, and limiting conditions. The question then is how an organisation should learn from these experiences and evolve to manage its organisation and achieve its objectives. In the next section, we discuss the implications of this theory for our research procedure. In the results section, we aim to identify micro-evolutions for each dimension mentioned in Table 2.

Method

Data sources

We conducted three intensive case studies, as multiple case studies enhance external validity and allow for replication in multiple settings (Johnston et al., 1999). To build up a complete picture of the evolution of a purchasing group, detailed data collection is necessary and access is often a constraint. Hence, we chose to use existing contacts to ensure we gained a good understanding of the evolutionary process. Our existing contacts include public sector cooperative purchasing groups in our respective countries. Based on prior knowledge through our contacts, the three cases were chosen as we were aware that they had been in existence for several years and they represented relatively young, yet developed forms of cooperation. This enabled us to look back over several macro-phases. The advantage of studying the development of relatively young

purchasing groups is that the first macro-phase of the groups took place only a couple of years ago. Therefore, a similar study of the creation of contemporary purchasing groups should not produce much different results (Miller and Friesen, 1984). As we had ongoing relationships with the groups, we could also return to them if in need for additional information to build a rich picture of their development.

The three purchasing groups have been active for at least five years and none of the groups use the concept of shared service centres (see Bergeron (2003) for definitions and further information about shared service centres). So, all groups are considered to be 'full' purchasing groups and not hybrid organisational forms between shared service centres and purchasing groups. In the next three sections, we describe the three case studies in more detail.

Study one investigates a purchasing group consisting of about fifty healthcare organisations in the United Kingdom. The members differ in size, among other things. The group is a separate organisation, although not a separate legal entity. Members invest in the group against a promised return on investment, which is laid down in a service level agreement. Currently, the group is governed by a board of directors representing about fifty members. It also has a chief executive officer that is responsible for day-to-day operations. Annually, performance targets are set, including achievements of tangible savings for the members. The focus of the group lies in regional and local health purchasing, but attention is also paid to cross-government regional purchasing and the uptake of national contracts.

Study two investigates a purchasing group consisting of five Dutch municipalities and incidentally some other regional organisations. The group is about six years old and is not a separate legal entity. The members are all located in the same region. By analyzing purchasing spends, the members found several opportunities for cooperative purchasing. Difficulties arise occasionally due to organisational differences, making it difficult for members to cooperatively improve the professional level of their purchasing functions and to find agreement on specifications of commodities. Still, all members evaluate the group as successful. Currently, the group has a steering committee, which coordinates the cooperative projects. During the steering committee meetings, the initiation and progress of cooperative projects is discussed. The group employs a part-time manager and in some cases, the group uses a private external party to carry out some activities.

Study three investigates a purchasing group consisting of fifteen scientific-technical and biological-medical German research centres. Some of the research centres operate sites all over Germany. Others operate locally and are considerably smaller in size. The purchasing managers of the research centres participate in a management board, which meets twice a year to discuss topics concerning the purchasing function. After the liberalisation of the energy markets, this board initiated the cooperative purchasing of electricity. The rotating leader of the board organises and administers the cooperative purchase of electricity. The group, which is not a separate legal entity, carried out three tenders for electricity in five years' time. Difficulties arose occasionally due to differences in required contract terms. Nevertheless, cost reductions were achieved and duplication of efforts and activities was prevented. The group ended after five years due to problems with one of the suppliers during the supplier selection process for a new cooperative contract.

Data collection

In order to understand how problematic factors interrelate in organisations, it is necessary to study the historical evolution of an organisation by utilising methods of longitudinal analysis

(e.g. Miller and Friesen, 1984). We therefore collected several sources of data over the complete timeline of the purchasing groups. The data sources include minutes, reports, business letters, administration data, and practical articles written about the groups. We also carried out semi-structured interviews with different stakeholders. These interviews were carried out to verify and complement the other data sources. We verified our interpretations of the interviews with the interview respondents.

Denzin and Lincoln (1998) describe different forms of triangulation; our research involved (1) data triangulation by using different sources of information, (2) methodological triangulation by using interviews and document analysis, and (3) investigator triangulation as each researcher analysed the summarised data of each case study and analysed the combined results of the case studies (see Tables 3-7). We went on refining the combined results until the findings from the different researchers aligned. By using triangulation methods, we enhanced the reliability and internal validity of the study.

Procedure

We created a detailed timeline for each purchasing group from their start to the time of collecting the data. We created the timelines by using organisational learning theory and similar procedures as those described by Miller and Friesen (1984), Miles and Huberman (1994), Ariño and Torre (1998), and Beverland and Bretherton (2001). This means that every time a driver, condition, objective, problem, reaction or achievement was mentioned in one of the data sources, we added this as a point to the timeline. We only incorporated problems directly related to cooperative purchasing. Thus, problems that did not differ much for purchasing groups and individual organisations were excluded. In doing so, we left out general management and purchasing issues. Next, we searched for patterns in the timelines of the three case studies. We identified similarities and differences and coded all issues found. We used different codes for drivers, conditions, objectives, problems, reactions, and achievements. After coding all issues, we classified the codes by using the dimensions shown in Table 2. Subsequently, for each dimension, we placed all codes of the three case studies in chronological order in one document. This document allowed us to classify the codes by using the macro-phases shown in Table 1.

Based on the results of the analysis described above, we identified several cooperative purchasing micro-evolutions for each dimension and for each macro-phase. We used the much-used format of the development model of Monczka et al. (Axelsson et al. 2005; Leyenaar et al., 2005) to describe the micro-evolutions (see also Tables 3-7). This format turned out to be suitable for orderly expressing the micro-evolutions. Still, as it is only a format, it did not influence the actual content of our results much. By building the timelines, we integrated the different data sources. In addition, we radically reduced the size of the data set to three orderly timelines. The largest timeline (study two) consisted of 132 points, such as drivers or problems. The smallest timeline (study three) consisted of 75 points.

Results

In this section, we first describe the macro-evolutions that took place in the case studies. This description is short as we do not focus on macro-evolutions. Next, we describe the micro-evolutions in more detail.

The three purchasing groups started with simple objectives, such as reducing purchasing prices and transaction costs, preventing duplication of efforts and activities, and sharing information.

On a macro-evolutionary level, case studies one and two developed from a quick win and purchasing focus to a general business focus. These groups also started to professionalise purchasing processes that take place within the purchasing departments of the members. On a macro-level, the groups developed for several dimensions (e.g. objectives) from an informal coalition to a mature group (see also Table 1). For some other dimensions, this was not the case (e.g. size). Evidence of such developmental differences between dimensions support our argument for a more flexible micro-evolutionary approach.

For our flexible approach, we identified several achievements, problems, and possible reactions that may occur within the first three macro-phases (none of the studies reached the final macro-phase yet). In the next tables, we describe the micro-evolutions for several dimensions. As the groups did not develop much on the dimensions ‘size’ and ‘supplier relationships’, we omitted them from our analysis. For the dimension related to managing supplier relations, this particularly involved a lot of issues that for purchasing groups are similar to individual organisations. For each of the other dimensions, we have integrated the achievements, problems, and reactions to problems in Tables 3 to 7.

Table 3: Establishing relationships between members (structure dimension: member relationships)

M* Number and description

- M1 0. Although the members share similar ideologies, no attention is paid to member relationships.
1. The **members are not very experienced** in cooperating and do not know each other very well. Identity and autonomy problems are resolved by **not enforcing cooperation**. Cooperative results are not immediately apparent and therefore, there may be some internal resistance.
 2. **Differences in needs are resolved** by flexible cooperative arrangements, like a formal declaration of intent. It is made clear what all members expect and the arrangements are based on an understanding of member needs. To **prevent motivation problems and inequality**, rotation of tasks could be set in place.
 3. Like 2, but the **group increases bonding** to improve the interpersonal relations between senior managers and purchasers of the members. This can be done by informal meetings. It turns out to be **difficult to allocate gains, costs, and risks equitably** among members.
- M2 4. Like 3, but the members **know each other well** and/or the group’s personnel knows the members well. A high level of trust between the members is present.
5. Like 4, but membership **commitment is sustained** at senior manager and purchaser level. The senior managers of the members and the managers of the group periodically meet to address the cooperation.
 6. Like 5, but if the group size becomes larger, then it becomes more **difficult to manage the many member relationships**. Typically, the cooperation is **not free of engagement** anymore. The discussion may be started whether the organisational form needs drastic change.
- M3 7. Like 6, but the group becomes more capable in **addressing all member concerns equitably**.
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*M = Macro-phase (see also Table 1)

Table 4: Establishing the objectives of the group (process dimension: objectives)

M* Number and description	
M1	<p>0. There are no clear objectives for the purchasing group.</p> <p>1. The cooperative objectives are general and are often set by the purchasing managers. Objectives include price reductions, transaction costs reductions, increased product quality, and sharing information. The objectives are oriented toward purchasing.</p> <p>2. Like 1, but the cooperative objectives are set for specific projects. The objectives are in line with the organisational objectives of the members. General objectives also include learning from each other and preventing duplication of efforts and activities. From now, the costs should be lower than the benefits and all members share similar cooperative objectives.</p> <p>3. Like 2, but the top managers of the members support the general cooperative objectives.</p>
M2	<p>4. Like 3, but the objectives are compared to the final results and if necessary, corrective actions are taken.</p> <p>5. Like 4, but the objectives are clearly communicated to all stakeholders.</p> <p>6. Like 5, but it is also an objective to improve the purchasing processes of the members. In addition, the members make priorities between the objectives.</p>
M3	<p>7. Like 6, but the cooperative objectives and the organisational objectives of the members start to integrate. The objectives are oriented toward logistics and general business. The focus is on increased efficiency and reduced total costs of ownership.</p>

Table 5: Establishing what to do together (process dimension: activities)

M* Number and description	
M1	<p>0. No structured decision making process exists for decisions concerning whether or not to cooperate.</p> <p>1. There is an ad hoc approach. The group is either driven by enthusiasts - champions -, they follow policy or copy what is believed to be best practice. If there is a shared purchasing need for simple generic products by chance, then the members tender cooperatively. It is not checked whether the members have sufficient mandate, internal support, resources, and knowledge to carry out the tenders. If the members lack specific knowledge, then consultancy services are used. The potential savings are rough estimates.</p> <p>2. There is a quick win approach. From now, new projects are triggered by shared problems or shared needs. Specifications, suppliers, contract terms, and calendars are synchronised. There is a strong focus on buying secondary and standardised products with no emotional charge. The members share tips and tricks.</p> <p>3. Like 2, but the members compare basic quantitative spend analyses, giving insights in potential price and cost savings, similarities, differences, and potential problems. Spend analyses are difficult to compare as the systems of the members are not synchronised. It is more difficult to find lucrative cooperative areas. From now, governmental directives are not considered to be limiting conditions for cooperative purchasing.</p>
M2	<p>4. Like 3, but the members compare extensive quantitative spend analyses. The members know when they want to cooperate. Primary and future purchasing needs are considered for the cooperative purchasing of simple and complex items. Mutual differences are confronted instead of ignored. So, more efforts are necessary for synchronisation of purchasing procedures, plans, common procurement vocabulary codes, and purchasing conditions. Still, sometimes, the group tenders in lots or does not synchronise everything.</p> <p>5. Like 4, but a legal adviser is consulted before complex tenders to prevent transparency and juridical issues. Purchasing policies and strategies are synchronised. The pros and cons of new projects are clearly calculated and communicated to each other. All main stakeholders are consulted before complex tenders.</p> <p>6. Like 5, but the members compare quantitative and qualitative spend analyses and benchmark their complete purchasing functions to find more cooperating and learning opportunities. Purchasing systems and supporting services are synchronised.</p>
M3	<p>7. Like 6, but the group starts offering more diversified commodities and services to the members. If the members lack specific knowledge, then workshops, education, and training sessions are offered by the group. This way, the purchasing competences of the members are further developed.</p>

Table 6: Establishing an organisational structure for the group (management dimension: organisation)

M* Number and description	
M1	<p>0. There is no coordination between the members.</p> <ol style="list-style-type: none"> 1. Extra member resources are made available to carry out a feasibility study and set up a group. The members can sign requirements of confidentiality. For groups with many members or activities, a steering committee is set in place. The purchasing tasks are carried out by project groups. There is a direct link between the steering committee and the project groups. 2. Like 1, but the members may use trial periods for new items in case they cope with change resistance. They may also get alongside individuals and tailor services to get support and people cooperating. The group uses consensus decision making. The members have made agreements about when and how to inform each other about past (expiry dates), current, and future projects. 3. Like 2, but the tasks are clearly divided and there are some cooperative procedures. Each contract has a contract manager to obtain contract compliance and to keep the contracts up-to-date. Top management support is guaranteed by management sponsors. The members think about whether or not others may join.
M2	<ol style="list-style-type: none"> 4. Like 3, but the group becomes more multidisciplinary. The group makes agreements about how to communicate with each other. There are clear procedures about how to obtain necessary information from the members for new joint tenders and there are membership criteria. The group has exit moments during cooperative tenders and binding contracts are considered to prevent midway cancellations by members. To prevent incomplete or inconsistent project evaluations, evaluations are standardised and reported. 5. Like 4, but the group kicks off new complex projects with all key persons as these projects have multiple stakeholders. Problems are proactively dealt with. Top management decides whether central (one member carries out the tasks) or coordinated purchasing (several members carry out the tasks) is suitable. 6. Like 5, but central purchasing is carried out by an external party or by the group's personnel. This party or the group has specific expertise. 'Central' contracts have mandatory participation clauses.
M3	<ol style="list-style-type: none"> 7. Like 6, but the group has a stable structure and may become a private enterprise. The group's personnel is multidisciplinary. For 'coordinated' items, the contracts may also have mandatory participation clauses.

Table 7: Establishing resources for the group (management dimension: group resources)

M* Number and description	
M1	<p>0. The group has no dedicated resources.</p> <ol style="list-style-type: none"> 1. The members start newsletters and records to inform each other about the progress of the group. The group has its own name. The available resources are often limited. 2. Like 1, but the group also reports about savings and plans. 3. Like 2, but the group has its own website with information about the members, the group, the cooperative activities, and special details.
M2	<ol style="list-style-type: none"> 4. Like 3, but the group employs one or more managers or assistants. The members share the costs. 5. Like 4, but a purchasing/contract management system/portal is set in place to manage the activities and contracts of the group. All members have access to the contracts in which they participate. 6. Like 5, but the group uses performance indicators to automatically measure the performance of cooperative activities and contract compliance. The management team of the purchasing group may become independent and neutral.
M3	<ol style="list-style-type: none"> 7. Like 6, but the group uses e-auctions and has e-catalogues and e-links with its members. It has very competent resources regarding how to conduct tenders and cooperative activities.

Discussion

Our findings support that it is possible to specify typical micro-evolutions that take place in purchasing groups. These specified micro-evolutions may help us to better understand the development of purchasing groups and to improve their performance. Our findings show that some cooperative problems can apply to several dimensions. For instance, differences in specifications, supplier preferences, and contract terms can have an impact on the dimension 'activities' and on the dimension 'member relationships'.

Table 1 may suggest that groups have to develop the dimensions simultaneously to be able to develop to another phase. Our results do not imply this. Depending on the form of a group, it

might be that a group develops on one dimension, yet not on another. In addition, it has to be realised that there are no clear-cut boundaries between macro-phases. As the boundaries between the micro-phases are more detailed, the boundaries are more clear-cut.

Despite the fact that our findings are formulated at a micro-evolutionary level and the previous findings of D'Aunno and Zuckerman (1987), Johnson (1999), and Nollet and Beaulieu (2003) are formulated at a macro-evolutionary level, our findings seem to confirm most of the existing macro-phases. In addition, as the previous studies were carried out in healthcare and the education sector and our study also included different sectors through studying healthcare organisations, municipalities, and research centres, it is reasonable to believe that the previous findings and our findings hold lessons for public practice in general.

Our research has implications for the practice and process of cooperative purchasing. For instance, to be able to develop a group, specific attention should be paid to the dimension 'activities' in the framework. Among other things, this dimension concerns the decision whether or not to cooperate. If a group does not develop in this dimension, it will most likely not get involved in the cooperative purchasing of complex or primary purchasing needs. Also, if a conscious decision regarding the dimension 'activities' is not made and a purchasing group is set-up in an inappropriate situation, this could affect the macro-evolution and micro-evolution.

Limitations

This study has some limitations, starting with the case studies selected. We conducted only three case studies in the public sector. Because we studied a limited number of case studies, we were able to research the case contexts in depth at a micro-evolutionary level. Our limited number of case studies will affect the generalisability of the findings, in particular when trying to match responses to specific problems and their applicability to the private sector. More case studies might reveal more problems and potentially more possible reactions to problems. In our selection of cases, it is also difficult to compensate for survivor bias, as we only studied relatively successful groups. The dimensions we omitted from our analysis could also be included in such studies. However, we note that in the countries where the case studies were conducted, there is little evidence of more developed purchasing groups existing to date.

Further limitations concern the methodological approach and analysis adopted. We studied the evolution of the purchasing groups in retrospect. This may have affected the data and our findings, as people are selective and can be biased in what they remember. Also, the data gathered was very rich. So, we had to select the most relevant elements from the data. Despite using several triangulation methods, we might have missed out on certain relevant elements.

The dimensions used are quite broad (e.g. activities, resources), which - although they have given an initial insight into micro-evolutions - may need fine-tuning in future research. In addition, in our analysis, we focused on the main problematic events and reactions for a limited number of dimensions. In further research, more dimensions and more steps in the dimensions could be studied, such as in the dimension 'size'. In the future, more longitudinal studies could help to assess the validity of our findings, as they enable us to observe closely what happens at the time when problems and changes occur.

Conclusion

Our results draw on the experiences of three purchasing groups and although we conducted an exploratory study, the results provide a new micro-evolutionary perspective on cooperative

purchasing. The results include solutions to cooperative purchasing problems and detailed descriptions of micro-evolutions that take place in the macro-phases in purchasing groups (see also Tables 3-7). Our micro-evolutionary results are subdivided into five dimensions: member relationships, objectives, activities, organisation, and resources. Although we argue that the dimension 'activities' is a very important one, the other dimensions are relevant as well. Our research results show that how purchasing groups score on the five dimensions can vary under different circumstances. Thus, purchasing groups do not have to develop the different dimensions simultaneously. This raises new and intriguing research questions related to which ideal combinations of dimension scores should be established under which circumstances.

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References and appendices

The references and appendices have been omitted because of limited space. Please contact one of the authors for these sections.